

# **EXHIBIT N**

## Exhibit N

### Claim Chart for U.S. Patent No. 11,924,743

Claim	Exemplary Infringement Analysis
1. A method of establishing a capability at a smartphone to conduct a financial transaction; the method comprising:	<p>The Accused Products perform “a method of establishing a capability at a smartphone to conduct a financial transaction.”</p> <p>For example, establishing the capability of an iPhone to conduct financial transactions via Apple Pay satisfies the method recited in claim 1.</p> <div style="border: 1px solid black; padding: 10px; margin: 10px 0;"> <p style="text-align: center;"><b>Use Apple Pay for contactless payments on iPhone</b></p> <p style="text-align: center;">With your Apple Cash, credit, and debit cards stored in the Wallet app  on iPhone, you can use Apple Pay for secure, contactless payments in stores, restaurants, and more.</p> </div> <p style="text-align: center;"><a href="https://support.apple.com/guide/iphone/use-apple-pay-for-contactless-payments-iphbd4cf42b4/ios">https://support.apple.com/guide/iphone/use-apple-pay-for-contactless-payments-iphbd4cf42b4/ios</a></p> <p>Investigation of both the patent and the Accused Products (and other potentially infringing products) is ongoing. This chart is based on evidence and analysis reasonably accessible at this time. Telcom reserves the right to update and amend the above as the litigation progresses, including in view of discovery provided by the Defendant.</p>
responsive to sensing a value of a parameter and responsive to determining that the value of the parameter sensed satisfies a criterion, selectively	<p>The Accused Products use a method that involves, “responsive to sensing a value of a parameter and responsive to determining that the value of the parameter sensed satisfies a criterion, selectively establishing a master-slave relationship, and selectively requesting an authorization to establish said capability.”</p> <p>For example, using an iPhone to conduct a financial transaction via Apple Pay includes a step responsive to sensing, by an iPhone-based sensor such as a physical sensor (for Touch ID) or a camera (for Face ID). When the sensed fingerprint or facial geometry matches a criterion, that iPhone is unlocked creating a master-slave relationship, and the iPhone can be configured to request an authorization to establish a capability such as Apple Pay.</p>

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establishing a master-slave relationship, and selectively requesting an authorization to establish said capability; then	<p><b>Face ID security</b></p> <p>With a simple glance, Face ID securely unlocks supported Apple devices. It provides intuitive and secure authentication enabled by the TrueDepth camera system, which uses advanced technologies to accurately map the geometry of a user's face. Face ID uses neural networks for determining attention, matching, and antispooing, so a user can unlock their phone with a glance, even with a mask on when using supported devices. Face ID automatically adapts to changes in appearance, and carefully safeguards the privacy and security of a user's biometric data.</p> <p><b>Touch ID security</b></p> <p>Touch ID is the fingerprint sensing system that makes secure access to supported Apple devices faster and easier. This technology reads fingerprint data from any angle and learns more about a user's fingerprint over time, with the sensor continuing to expand the fingerprint map as additional overlapping nodes are identified with each use.</p> <p>Apple devices with a Touch ID sensor can be unlocked using a fingerprint. Touch ID doesn't replace the need for a device passcode or user password, which is still required after device startup, restart, or logout (on a Mac). In some apps, Touch ID can also be used in place of a device passcode or user password—for example, to unlock password-protected notes in the Notes app, to unlock keychain-protected websites, and to unlock supported app passwords. However, a device passcode or user password is always required in some scenarios (for example, to change an existing device passcode or user password or to remove existing fingerprint enrollments or create new ones).</p> <p><a href="https://support.apple.com/guide/security/face-id-and-touch-id-security-sec067eb0c9e/1/web/1">https://support.apple.com/guide/security/face-id-and-touch-id-security-sec067eb0c9e/1/web/1</a></p>

Claim	Exemplary Infringement Analysis
	<p><b>When you use Apple Pay in stores</b></p> <p>When you <a href="#">use Apple Pay in stores</a> that accept contactless payments, Apple Pay uses Near Field Communication (NFC) technology between your device and the payment terminal. NFC is an industry-standard, contactless technology that's designed to work only across short distances. If your iPhone is on and detects an NFC field, it will present you with your default card. To send your payment information, you must authenticate using Face ID, Touch ID, or your passcode (except in Japan if you designate a Suica card for Express Transit). With Face ID or with Apple Watch, you must double-click the side button when the device is unlocked to activate your default card for payment.</p> <p>After you authenticate your transaction, the Secure Element provides your Device Account Number and a transaction-specific dynamic security code to the store's point of sale terminal along with additional information needed to complete the transaction. Again, neither Apple nor your device sends your actual payment card number. Before they approve the payment, your bank, card issuer, or payment network can verify your payment information by checking the dynamic security code to make sure that it's unique and tied to your device.</p> <p><a href="https://support.apple.com/en-us/HT203027">https://support.apple.com/en-us/HT203027</a></p> <p><b>Pay with your default card on an iPhone with Face ID</b></p> <ol style="list-style-type: none"> <li>1. Double-click the side button.</li> <li>2. When your default card appears, glance at iPhone to authenticate with Face ID, or enter your passcode.</li> <li>3. Hold the top of your iPhone near the card reader until you see Done or a checkmark on the screen.</li> </ol> <p><b>Pay with your default card on an iPhone with Touch ID</b></p> <ol style="list-style-type: none"> <li>1. Rest your finger on Touch ID.</li> <li>2. Hold the top of your iPhone near the card reader until you see Done or a checkmark on the screen.</li> </ol> <p><a href="https://support.apple.com/guide/iphone/use-apple-pay-for-contactless-payments-iphbd4cf42b4/ios">https://support.apple.com/guide/iphone/use-apple-pay-for-contactless-payments-iphbd4cf42b4/ios</a></p>

Claim	Exemplary Infringement Analysis
	<p><b>Add a debit or credit card</b></p> <ol style="list-style-type: none"> <li>1. Open the Wallet app  on your iPhone.</li> <li>2. Tap . You may be asked to <a href="#">sign in with your Apple ID</a>.</li> <li>3. Do one of the following: <ul style="list-style-type: none"> <li>• <i>Add a new card:</i> Tap Debit or Credit Card, tap Continue, then position your card so that it appears in the camera frame, or enter the card details manually.</li> <li>• <i>Apply for Apple Card:</i> See <a href="#">Set up and use Apple Card on iPhone</a>.</li> <li>• <i>Add your previous cards:</i> Tap Previous Cards, then choose any cards you previously used. These cards may include the card associated with your Apple ID, cards you use with Apple Pay on your other devices, cards you <a href="#">added to Safari AutoFill</a>, or cards you removed from Wallet. Tap Continue, authenticate with Face ID or Touch ID, then follow the onscreen instructions.</li> <li>• <i>Add a card from a supported app:</i> Tap the app of your bank or card issuer (below From Apps on Your iPhone).</li> </ul> </li> </ol> <p>The card issuer determines whether your card is eligible for Apple Pay, and may ask you for additional information to complete the verification process.</p> <p><a href="https://support.apple.com/guide/iphone/set-up-apple-pay-iph9b7f53382/ios">https://support.apple.com/guide/iphone/set-up-apple-pay-iph9b7f53382/ios</a></p> <p>Investigation of both the patent and the Accused Products (and other potentially infringing products) is ongoing. This chart is based on evidence and analysis reasonably accessible at this time. Telcom reserves the right to update and amend the above as the litigation progresses, including in view of discovery provided by the Defendant.</p>
receiving the authorization to establish the capability, responsive to	The Accused Products use a method that involves “receiving the authorization to establish the capability, responsive to said selectively requesting an authorization, and establishing the capability at the smartphone responsive to said receiving the authorization.”

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said selectively requesting an authorization, and establishing the capability at the smartphone responsive to said receiving the authorization;	<p>In response to transmitting the data requesting authorization to establish the capability to perform a financial transaction, the iPhone receives the authorization from the card issuer authorizing the payment card.</p> <div data-bbox="382 393 1453 1139" style="border: 1px solid black; padding: 10px;"> <p><b>Add a debit or credit card</b></p> <ol style="list-style-type: none"> <li>1. Open the Wallet app  on your iPhone.</li> <li>2. Tap . You may be asked to <a href="#">sign in with your Apple ID</a>.</li> <li>3. Do one of the following: <ul style="list-style-type: none"> <li>• <i>Add a new card:</i> Tap Debit or Credit Card, tap Continue, then position your card so that it appears in the camera frame, or enter the card details manually.</li> <li>• <i>Apply for Apple Card:</i> See <a href="#">Set up and use Apple Card on iPhone</a>.</li> <li>• <i>Add your previous cards:</i> Tap Previous Cards, then choose any cards you previously used. These cards may include the card associated with your Apple ID, cards you use with Apple Pay on your other devices, cards you <a href="#">added to Safari AutoFill</a>, or cards you removed from Wallet. Tap Continue, authenticate with Face ID or Touch ID, then follow the onscreen instructions.</li> <li>• <i>Add a card from a supported app:</i> Tap the app of your bank or card issuer (below From Apps on Your iPhone).</li> </ul> </li> </ol> <p>The card issuer determines whether your card is eligible for Apple Pay, and may ask you for additional information to complete the verification process.</p> <p><a href="https://support.apple.com/guide/iphone/set-up-apple-pay-iph9b7f53382/ios">https://support.apple.com/guide/iphone/set-up-apple-pay-iph9b7f53382/ios</a></p> </div>

Claim	Exemplary Infringement Analysis
	<p><b>When a Payment Card is added to Apple Pay</b></p> <p>When you add a new payment card (<i>i.e. a credit or a debit card</i>) to Apple Pay, here are the steps that happen behind the scenes.</p> <ol style="list-style-type: none"> <li>1. The payment card's <i>PAN (Primary Account Number)</i>, along with other card related personal details <i>i.e. Your Name, Card Expiration Date</i>, is sent by the <i>Apple Wallet App</i> to the <i>Apple Pay servers</i>.</li> <li>2. From your PAN, the Apple Pay server identifies the credit card <b>Issuer Bank</b>, and then pass the PAN and your personal details to the <b>Issuer Bank</b> requesting a <i>Payment Token</i> from the <b>Issuer Bank</b>.</li> </ol> <p><i>Note that the Issuer Bank must have partnered with Apple Pay, and be part of the Apple Pay network in order for Apple to add that payment card onto the iPhone. If the Issuer Bank has not partnered with Apple Pay, you cannot add that card to Apple Pay.</i></p> <p><a href="https://codeburst.io/how-does-apple-pay-actually-work-f52f7d9348b7">https://codeburst.io/how-does-apple-pay-actually-work-f52f7d9348b7</a></p>
	<h2>Apple Pay participating banks in Canada, Latin America, and the United States</h2> <p>Apple Pay works with many of the major credit and debit cards from the top banks. Just add your supported cards and continue to get all the rewards, benefits, and security of your cards.</p> <p><a href="https://support.apple.com/en-us/HT204916">https://support.apple.com/en-us/HT204916</a></p>

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	<p>Investigation of both the patent and the Accused Products (and other potentially infringing products) is ongoing. This chart is based on evidence and analysis reasonably accessible at this time. Telcom reserves the right to update and amend the above as the litigation progresses, including in view of discovery provided by the Defendant.</p>
<p>wherein said selectively establishing a master-slave relationship, said selectively requesting an authorization and said receiving the authorization comprises wirelessly transmitting/receiving using a WiFi air interface protocol, an Orthogonal Frequency Division Multiplexing air interface protocol and/or an Orthogonal Frequency Division Multiple Access air interface protocol.</p>	<p>The Accused Products perform the method above “wherein said selectively establishing a master-slave relationship, said selectively requesting an authorization and said receiving the authorization comprises wirelessly transmitting/receiving using a WiFi air interface protocol, an Orthogonal Frequency Division Multiplexing air interface protocol and/or an Orthogonal Frequency Division Multiple Access air interface protocol.”</p> <p>For example, iPhones may use a Wi-Fi, OFDM, and/or OFDMA protocol to transmit the data requesting authorization from an issuing bank to establish the capability to perform a financial transaction by Apple Pay.</p>

air interface protocol; and



iPhone 15 Pro  
iPhone 15 Pro Max



iPhone 15  
iPhone 15 Plus



iPhone 14  
iPhone 14 Plus



iPhone 13



iPhone 12

[iPhone 15 Pro and iPhone 15 Pro Max](#)

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Model <sup>3</sup>	5G Bands	LTE Bands <sup>2</sup>	Country or Region
iPhone 15 Pro Model A2848	n1 (2100 MHz) n2 (1900 MHz) n3 (1800 MHz)	1 (2100 MHz) 2 (1900 MHz) 3 (1800 MHz)	Puerto Rico United States
iPhone 15 Pro Max Model A2849	n5 (850 MHz) n7 (2600 MHz) n8 (900 MHz) n12 (700 MHz) n14 (700 PS) n20 (800 DD) n25 (1900 MHz) n26 (800 MHz) n28 (700 APT) n29 (700d MHz) n30 (2300 MHz) n38 (TD 2600) n40 (TD 2300) n41 (TD 2500) n48 (TD 3600) n53 (TD 2500) n66 (AWS-3) n70 (AWS-4) n71 (600 MHz) n75 (SDL 1500) n76 (SDL 1500) n77 (TD 3700) n78 (TD 3500) n79 (TD 4700) n258 (26 GHz) n260 (39 GHz) n261 (28 GHz)	4 (AWS) 5 (850 MHz) 7 (2600 MHz) 8 (900 MHz) 12 (700 MHz) 13 (700c MHz) 14 (700 PS) 17 (700b MHz) 18 (800 MHz) 19 (800 MHz) 20 (800 DD) 25 (1900 MHz) 26 (800 MHz) 28 (700 APT) 29 (700d MHz) 30 (2300 MHz) 32 (1500 L-band) 34 (TD 2000) 38 (TD 2600) 39 (TD 1900) 40 (TD 2300) 41 (TD 2500) 42 (TD 3500) 46 (TD Unlicensed) 48 (TD 3600) 53 (TD 2500) 66 (AWS-3) 71 (600 MHz)	

Claim	Exemplary Infringement Analysis
	<p data-bbox="371 249 889 282"><a href="https://www.apple.com/iphone/cellular/">https://www.apple.com/iphone/cellular/</a></p> <h2 data-bbox="397 331 1339 388">Wi-Fi specifications for Apple devices</h2> <p data-bbox="397 409 1529 437">The following are Wi-Fi specification details for Apple devices. Descriptions of the details are as follows:</p> <ul data-bbox="397 465 1529 530" style="list-style-type: none"> <li data-bbox="397 465 1529 530">• <i>802.11 compatibility and frequency band:</i> 802.11ax (Wi-Fi 6 and Wi-Fi 6E), 802.11ac (Wi-Fi 5), 802.11n (Wi-Fi 4), 802.11a, 802.11b/g and 2.4 GHz or 5 GHz.</li> </ul> <p data-bbox="397 556 1529 654">Apple platforms supporting Wi-Fi 6E can join Wi-Fi 6E networks that are discoverable on 2.4 GHz or 5 GHz channels, and on 6 GHz Preferred Scanning Channels, where 6 GHz is allowed by regulatory domain.</p> <p data-bbox="371 665 1698 698"><a href="https://support.apple.com/guide/deployment/wi-fi-specifications-for-apple-devices-dep268652e6c/web">https://support.apple.com/guide/deployment/wi-fi-specifications-for-apple-devices-dep268652e6c/web</a></p> <div data-bbox="371 739 1056 780" style="border: 1px solid black; padding: 10px;"> <p data-bbox="371 739 1009 780"><b>When a Payment Card is added to Apple Pay</b></p> <p data-bbox="371 796 1262 869">When you add a new payment card (<i>i.e. a credit or a debit card</i>) to Apple Pay, here are the steps that happen behind the scenes.</p> <ol data-bbox="397 926 1284 1188" style="list-style-type: none"> <li data-bbox="397 926 1284 1046">1. The payment card's <i>PAN (Primary Account Number)</i>, along with other card related personal details <i>i.e. Your Name, Card Expiration Date</i>, is sent by the <i>Apple Wallet App</i> to the <i>Apple Pay servers</i>.</li> <li data-bbox="397 1073 1284 1188">2. From your PAN, the Apple Pay server identifies the credit card <b>Issuer Bank</b>, and then pass the PAN and your personal details to the <b>Issuer Bank</b> requesting a <i>Payment Token</i> from the <b>Issuer Bank</b>.</li> </ol> <p data-bbox="397 1199 1284 1351"><i>Note that the Issuer Bank must have partnered with Apple Pay, and be part of the Apple Pay network in order for Apple to add that payment card onto the iPhone. If the Issuer Bank has not partnered with Apple Pay, you cannot add that card to Apple Pay.</i></p> <p data-bbox="371 1362 1284 1395"><a href="https://codeburst.io/how-does-apple-pay-actually-work-f52f7d9348b7">https://codeburst.io/how-does-apple-pay-actually-work-f52f7d9348b7</a></p> </div>

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<p>wherein the value of the parameter that is sensed comprises a signal, a number, a word, a code, a velocity, an acceleration, a time-of-day, a position, a humidity, a temperature, a height, a level of brightness, a level of darkness, a blood pressure, a heart rate, a blood content, a physiological state and/or a psychological state.</p>	<p>The Accused Products perform the method above, “wherein the value of the parameter that is sensed comprises a signal, a number, a word, a code, a velocity, an acceleration, a time-of-day, a position, a humidity, a temperature, a height, a level of brightness, a level of darkness, a blood pressure, a heart rate, a blood content, a physiological state and/or a psychological state.”</p> <p>For example, the parameter sensed by the iPhone is, for example, a physiological state obtained by using Touch ID or Face ID.</p> <div data-bbox="382 703 1368 1204" style="border: 1px solid black; padding: 10px;"> <p><b>When you use Apple Pay in stores</b></p> <p>When you <a href="#">use Apple Pay in stores</a> that accept contactless payments, Apple Pay uses Near Field Communication (NFC) technology between your device and the payment terminal. NFC is an industry-standard, contactless technology that's designed to work only across short distances. If your iPhone is on and detects an NFC field, it will present you with your default card. To send your payment information, you must authenticate using Face ID, Touch ID, or your passcode (except in Japan if you designate a Suica card for Express Transit). With Face ID or with Apple Watch, you must double-click the side button when the device is unlocked to activate your default card for payment.</p> <p>After you authenticate your transaction, the Secure Element provides your Device Account Number and a transaction-specific dynamic security code to the store's point of sale terminal along with additional information needed to complete the transaction. Again, neither Apple nor your device sends your actual payment card number. Before they approve the payment, your bank, card issuer, or payment network can verify your payment information by checking the dynamic security code to make sure that it's unique and tied to your device.</p> </div> <p><a href="https://support.apple.com/en-us/HT203027">https://support.apple.com/en-us/HT203027</a></p>

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	<p><b>Face ID security</b></p> <p>With a simple glance, Face ID securely unlocks supported Apple devices. It provides intuitive and secure authentication enabled by the TrueDepth camera system, which uses advanced technologies to accurately map the geometry of a user's face. Face ID uses neural networks for determining attention, matching, and antispoofting, so a user can unlock their phone with a glance, even with a mask on when using supported devices. Face ID automatically adapts to changes in appearance, and carefully safeguards the privacy and security of a user's biometric data.</p> <p><b>Touch ID security</b></p> <p>Touch ID is the fingerprint sensing system that makes secure access to supported Apple devices faster and easier. This technology reads fingerprint data from any angle and learns more about a user's fingerprint over time, with the sensor continuing to expand the fingerprint map as additional overlapping nodes are identified with each use.</p> <p>Apple devices with a Touch ID sensor can be unlocked using a fingerprint. Touch ID doesn't replace the need for a device passcode or user password, which is still required after device startup, restart, or logout (on a Mac). In some apps, Touch ID can also be used in place of a device passcode or user password—for example, to unlock password-protected notes in the Notes app, to unlock keychain-protected websites, and to unlock supported app passwords. However, a device passcode or user password is always required in some scenarios (for example, to change an existing device passcode or user password or to remove existing fingerprint enrollments or create new ones).</p> <p><a href="https://support.apple.com/guide/security/face-id-and-touch-id-security-sec067eb0c9e/1/web/1">https://support.apple.com/guide/security/face-id-and-touch-id-security-sec067eb0c9e/1/web/1</a></p>

Claim	Exemplary Infringement Analysis	
	<p><b>Pay with your default card on an iPhone with Face ID</b></p> <ol style="list-style-type: none"><li>1. Double-click the side button.</li><li>2. When your default card appears, glance at iPhone to authenticate with Face ID, or enter your passcode.</li><li>3. Hold the top of your iPhone near the card reader until you see Done or a checkmark on the screen.</li></ol> <hr/> <p><b>Pay with your default card on an iPhone with Touch ID</b></p> <ol style="list-style-type: none"><li>1. Rest your finger on Touch ID.</li><li>2. Hold the top of your iPhone near the card reader until you see Done or a checkmark on the screen.</li></ol> <p><a href="https://support.apple.com/guide/iphone/use-apple-pay-for-contactless-payments-iphbd4cf42b4/ios">https://support.apple.com/guide/iphone/use-apple-pay-for-contactless-payments-iphbd4cf42b4/ios</a></p> <p>Investigation of both the patent and the Accused Products (and other potentially infringing products) is ongoing. This chart is based on evidence and analysis reasonably accessible at this time. Telcom reserves the right to update and amend the above as the litigation progresses, including in view of discovery provided by the Defendant.</p>	